

Notice of Allowability

Application No.

10/511,114

Applicant(s)

JITARU, IONEL D.

Examiner

Art Unit

Gary L. Laxton

2838

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the application filed 04/22/05.
2. ☒ The allowed claim(s) is/are 1-41.
3. ☒ The drawings filed on 12 October 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 10/12/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Gary L. Laxton
Primary Examiner
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9/19/05

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-41 are allowed.
2. The following is an examiner's statement of reasons for allowance:

Claims 1-4; prior art of record fails to disclose or suggest, inter alia, a power conversion circuit having a power transformer, four semiconductor switching elements, a split secondary winding on the power transformer, a first unidirectional current conducting device connected from one end of the split secondary winding to an inductor, a second unidirectional current conducting device connected from a second end of the split secondary winding to the inductor, the inductor and a connection to an interconnection between two halves of the split secondary winding being connected to an output of the power conversion circuit, an injection voltage source connected to the primary winding of the power transformer for applying an injection voltage to the primary winding in addition to an input voltage to the primary winding via the semiconductor switching elements.

Claims 5-25; prior art of record fails to disclose or suggest, inter alia, a power conversion circuit having an injection voltage source connected to apply a supplemental reverse bias voltage to a semiconductor unidirectional current conducting device to terminate forward conduction in the device and to deplete carriers in the device at times prior to each reverse biasing of the device by an alternating of the main primary current causing a reversal of voltage across an associated power transformer winding.

Claims 26-31; prior art of record fails to disclose or suggest, inter alia, a power conversion circuit having means for applying a first low reverse bias voltage to the semiconductor rectifying means to halt forward conduction and deplete carriers in the semiconductor rectifying means prior to each application to the semiconductor rectifying means of a reverse bias larger than the first low reverse bias voltage.

Claims 32-41; prior art of record fails to disclose or suggest, inter alia, a method of power conversion including switching a DC voltage to supply a power transformer primary and rectifying with at least a first semiconductor rectifier a transformer output from a secondary of the power transformer; the method comprising applying to the semiconductor rectifier a low reverse bias voltage to deplete at least one semiconductor junction of the semiconductor rectifier of carriers in advance of each application to the semiconductor rectifier of a high reverse biasing power transformer secondary voltage excursion.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,862,195 Jitaru discloses a soft transition converter; US 6,567,285 Cho et al disclose a switching power supply unit; US 5,877,951 Mweene discloses a power converter with a controlled full bridge; US 5,619,404 Zak discloses a


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single state high power factor converter; US RE38,196 Vinciarelli et al discloses control of stored magnetic energy in a power converter.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary L. Laxton whose telephone number is (571) 272-2079. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (571) 272-2084. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Gary L. Laxton
Primary Examiner
Art Unit 2838
9/19/05